

WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2011/12

Bewick's Swan *Cygnus columbianus bewickii*

1. Abundance

The seventh internationally coordinated census of Bewick's Swans (International Swan Census) was undertaken in January 2010. This census produced a British and Irish total of 7,079 Bewick's Swans, a decrease of 1.9% compared with the 2005 census. In England and Wales, the total count (6,999) was just a few birds higher than during the previous census, whereas only 79 birds were seen in the Republic of Ireland (compared with 211 in 2005 and 1,500 in 1990) and one individual was recorded in Northern Ireland (compared with 13 in 2005 and 504 in 1990). Numbers in England and Wales have remained relatively stable since the mid-1990s, mainly due to the consistently high numbers at the Ouse Washes, Norfolk/Cambridgeshire. In contrast, numbers in Ireland have fallen markedly. Only a proportion of the Northwest European Bewick's Swan population winters in Britain and Ireland. If compared with the 2005 population estimate (21,500), the 2010 British and Irish total represents 33% of the total population, which is similar to that recorded in 2000 and 2005. However, overall Bewick's Swan numbers have been declining in recent years (Rees & Beekman 2010) but until the results from elsewhere become available we are unable to determine the extent of change in overall abundance since the last census.

2. Breeding success

Bewick's Swan age counts were conducted at three major wintering sites for the species in the UK during winter 2011/12, namely WWT Slimbridge (Southwest England), WWT Martin Mere/Ribble Estuary (Northwest England) and the Ouse Washes/Nene Washes (East Central England). A small number of swans were also aged at two sites in Northern Ireland and the Republic of Ireland. Data from all sites, with the exception of Slimbridge, were collected in January 2012 because early arrivals (*i.e.* those present in October and November) tend to be non/failed breeders (Rees *et al.* 1997), whereas age assessments made in January can be taken as being more representative of the population as a whole. Age counts at Slimbridge, where individual swans wintering at the site are identified daily by their natural bill markings, are for all swans recorded there during the winter season (October to March). With the exception of Slimbridge, the percentage of young and mean brood size was derived from age counts conducted within a five-day window (between 1317 January), in an effort to avoid any bias that would arise from repeated observations of the same families at certain sites. Regional variation in the percentage of young was also assessed in order to determine any differences in the geographical distribution of family parties.

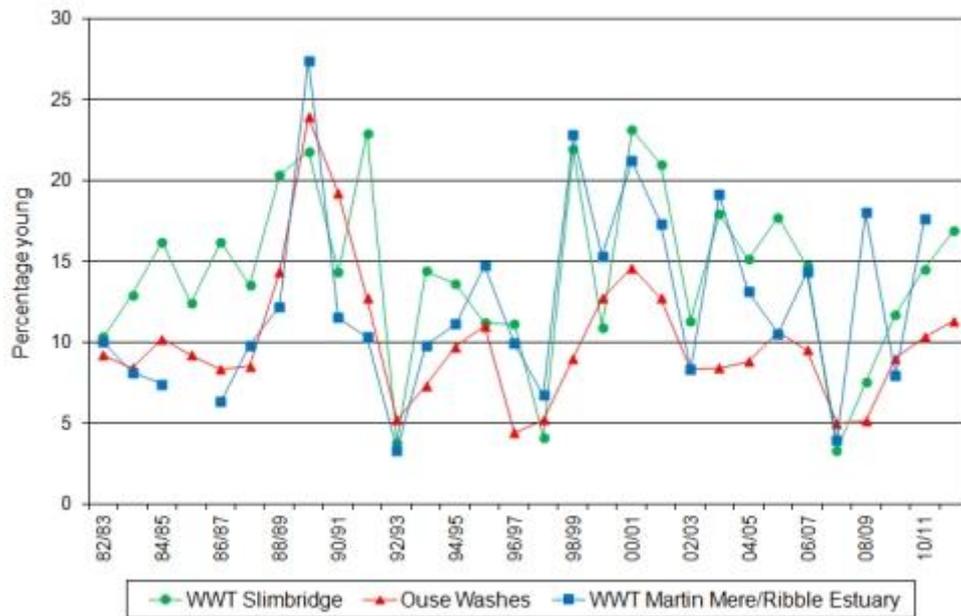
A total of 2,805 Bewick's Swans was aged and brood sizes were recorded for 175 families. The low sample sizes for brood counts at Martin Mere/Ribble Estuary and in Ireland reflected the low number of Bewick's Swans wintering in these areas.

Overall, Bewick's Swan flocks contained 11.9% cygnets and the mean brood size of pairs with young was 1.9 cygnets. The mean percentage of young in flocks in England was 11.5% ($n = 2,351$), slightly higher than the previous ten-year mean (2001/02 to 2010/11; 10.3%). The mean brood size was 1.8 ($n = 149$ broods) cygnets, slightly lower than the previous ten-year mean (2001/02 to 2010/11; 1.9 cygnets).

The proportion of young and mean brood size for Bewick's Swans at sites in Britain and Ireland during winter 2011/12.

Region	Total aged (no. of young)	% young	No. of broods (no. of young)	Mean brood size
WWT Martin Mere/Ribble Estuary (Northwest England)	7 (3)	Limited data	1 (3)	Limited data
Ouse Washes (East central England)	2,494 (283)	11.3	154 (278)	1.8
WWT Slimbridge (Southwest England)	284 (48)	16.9	19 (48)	2.5
Northern Ireland	4 (0)	Limited data	0 (0)	Limited data
Republic of Ireland	16 (1)	6.3	1 (1)	Limited data
Overall	2,805 (335)	11.9	175 (330)	1.9

There was variation in the proportion of cygnets recorded across Britain and Ireland with the percentage of young ranging from 6.3% in the Republic of Ireland to 16.9% at Slimbridge. Variation between East Central England and Southwest England was statistically significant ($X^2_1 = 7.5, P < 0.01$). Sample sizes were not large enough to test statistically for variation between the other regions. The proportion of young recorded at Martin Mere/Ribble Estuary and in Northern Ireland could not be assessed accurately in 2011/12 as very few birds were recorded there. Likewise, regional variation in brood sizes could not be assessed in these areas and in the Republic of Ireland because of the small number of broods recorded.



The annual average percentage of young Bewick's Swans in WWT Slimbridge, Ouse Washes and WWT Martin Mere/Ribble Estuary, 1982/83-2011/12. Data for WWT Martin Mere/Ribble Estuary in 2011/12 are omitted because the sample size was very small.

3. Discussion

These data indicate that Bewick's Swan breeding success was again relatively poor in 2011. Although annual breeding success has improved since the exceptionally poor 2007 breeding season, and the percentage of young recorded at English sites (11.5%) was marginally higher than the ten-year average (10.3%). Breeding success in 2011 follows successive poor breeding seasons since 2003 with the percentage of young in British wintering flocks remaining at less than 15%. A coordinated age count of 7,632 birds wintering at sites in Britain, the Netherlands, Poland, Denmark, Germany and Belgium between 3 and 5 December 2011 found 9.6% young overall, thus confirming that 2011 was a poor breeding year for the Northwest European population of Bewick's Swan (J. Beekman & W. Tijsen, pers comm. 2011).

There was regional variation in the distribution of Bewick's Swan families recorded in different parts of England, with a higher proportion of young found in Southwest England than in East Central England. This may reflect the tendency for smaller flocks, such as those recorded in the Southwest, to include a higher proportion of families than the larger flocks, whereas the latter may include a higher proportion of non-breeding (or failed breeding) birds (Rees et al. 1997).

4. References

Rees, EC, & JH Beekman. 2010. Northwest European Bewick's Swan: a population in decline. *British Birds* 103: 640-650.

Rees, EC, JS Kirby & A Gilburn. 1997. Site selection by swans wintering in Britain; the importance of habitat and geographic location. *Ibis* 139: 337-352.

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Goose & Swan Monitoring